COM S/SE 319 : Construction of User Interfaces
Fall 2019

Homework 4

[Total Points: 50]

Assignment Due: Sunday, November 3, 2019, 11:59 PM

[N.B.:5% penalty per day up to a maximum of 7 days after **November 3, 2019**]

Required frameworks: **AngularJS** (for the first task) and **JavaFX** (for the second task).

Task 1 (20 points):

The focus of this part of the homework is on AngularJS. Implementing the following parts using plain JavaScript is not accepted.

Check out the files cars.html and cars.js. cars.js provides an array of cars owned by a certain dealership. Your task will be to display the cars in an html table and apply filtering techniques to the results.

1. Show the list of cars in a table with columns “Manufacturer, Model, Year, Stock, Price, Option”. Prices should be shown in the right format like $7800.00. (Use AngularJS Filters) **[8 points]**.

2. In the “option” column, each row should have a button with the text “increment” that whenever it is clicked, it will increase the stock number of that specific car on that row by one. (Use ng-click) **[4 points].**

3. Make the header of column “Year” clickable, such that it lists the cars in ascending order. Click it again and it must reverse the list (descending order) **[4 points]**.

4. Create a drop-down menu with the names of manufacturers and an “All” option. When a manufacturer is selected, it filters the table to only show the cars that are manufactured by that company. (Use AngularJS filters) **[4 points]**.

Task 2 (25 points):

Implement a **Turn Based human vs human tic-tac-toe game** with suitable **GUI**. Typically **Tic-tac-toe** (also known as noughts and crosses or **X**s and **O**s) is a paper-and-pencil game for two players, **X** and **O**, who take turns marking the spaces in a **3×3 grid**. The player who succeeds in placing three of their marks in a horizontal, vertical, or diagonal row wins the game. The given example of the game is won by the first player, X which has been illustrated in the below figure 1 : (More about Tic-tac-toe:https://en.wikipedia.org/wiki/Tic-tac-toe)

Figure 1: Tic-tac-toe Game

You have to implement this task using **Java** code and **JavaFX** GUI components.

Check list:

1. Use the provided images (**included in the zip file**) for marking **X** and **O**. [**2 points**]

2. Show which player's turn while playing the game. [**3 points**]

3. Click on the blank cell to mark **X** or **O** (unmarked cell should be checked and marked cell cannot be marked again). **[5 points]**

4. When one player wins, stop the game and show "Congratulations, **X** win the game" or "Congratulations, **O** win the game" in your designed GUI. [**5 points**]

5. When all cells are filled in and no one wins, stop the game and show "**Draw**". [**5 points**]

6. When the game is over, show the option to restart a new game. [**5 points**]

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Please find the attached HW 4 zip files Fall-2019-HW4-Files.zip on Canvas.

Submit requirement [5 points]
Submit via Canvas a **compressed file (.zip)** [rename it with your LAST NAME] containing the following folders and files:

- **Task1** folder**:** Attaching all files of your implementation for task 1 in this folder.
- **Task2** folder**:** Attaching your project (which includes the source code) of your implementation for task 2.

- **README** file explaining how to compile and run your program & a

- **Report** (.docx or .pdf) file describing your solution approach and **screenshots** of every required output.